

REMARKS/ARGUMENTS

Summary of the Examiner's Actions

The examiner rejected Claims 1 and 3 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,392,246 ("the '246 patent"), issued to Wiberg *et al.* Applicant acknowledges the rejection under 35 U.S.C. § 102(b).

The examiner rejected Claims 4, 5, 8-10, 14, 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over the '246 patent in view of U.S. Patent No. 4,801,423 ("the '423 patent"), issued to Warren *et al.* The examiner rejected Claims 2, 6, 7, 15, 16 and 23-25 under 35 U.S.C. § 103(a) as being unpatentable over the '246 and '423 patents in view of U.S. Patent Application, Publication No. 2002/0060300 ("the '300 application"), filed by O'kane, Sr. *et al.* The examiner rejected Claims 11, 12 and 19-22 under 35 U.S.C. § 103(a) as being unpatentable over the '246 and '423 patents in view of U.S. Patent No. 4,074,141 ("the '141 patent") issued to Bryant. The examiner rejected Claims 13, 26 and 27 under 35 U.S.C. § 103(a) as being unpatentable over the '246, '423 and '141 patents in view of the '300 application. Applicants acknowledge the rejections under 35 U.S.C. § 103(a).

Rejections under 35 U.S.C. § 102(b)

Section 2131 of the Manual of Patent Examining Procedure describes the basis for anticipation under 35 U.S.C. § 102. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990).

The examiner rejected Claims 1 and 3 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,392,246 ("the '246 patent"), issued to Wiberg *et al.* The examiner indicated that:

“Wiberg et al. discloses a closure (first and second doors 3, 4) for shielding, and selectively providing access to, the targeting assembly (compartment 9) of a particle accelerator (a cyclotron), the particle accelerator including a housing defining an opening (covered by doors 3, 4) for accessing the targeting assembly, the particle accelerator being surrounded by an outer shielded enclosure (molded sections 1, 2, 3, 4) providing selective access to the particle accelerator, said closure comprising a first door (3) and a second door (4) for selectively covering the opening in the housing of the particle accelerator, and said closure including a door mounting assembly including hinge assemblies (5) to facilitate pivotally mounting said first and second doors on the housing of the particle accelerator, whereby said first and second doors of said closure selectively cover the opening in the housing of the particle accelerator when access to the particle accelerator through the outer shielded enclosure is provided.”

However, it is respectfully submitted that the structures of the present invention and that of Wiberg *et al.*, are structurally and patentably distinct. The examiner is incorrect in his description of the prior art. Wiberg *et al.*, teach:

“At the left side of the concrete casing portion 1 there is created a further compartment 9 (indicated in FIGS. 1 and 5). The compartment 9 offers target media handling 10 for the gas targets (e.g. isotopes ^{11}C and ^{15}O) consisting of valves and pressure gauges and water dispensing systems 11 for the water targets...”

Compartment 9 is not the targeting assembly, but support equipment for targets, “consisting of valves and pressure gauges” but not of targets themselves. Moreover, Compartment 9 is not mounted on the housing of the accelerator itself, but on the “concrete casing portion 1.” This is analogous to mounting a secondary housing on the stationary shield assemblies 18 and 20 described in the present application, and is in almost no way connected to the claims of the present application.

Moreover, what Wiberg *et al.*, disclose “an integrated closed radiation-proof system for PET isotope production....” (see col. 4, lines 26-30.) Further, the Wiberg *et*

al., device is “self-supporting”. (see col. 4, lines 31-34). Essentially, Wiberg *et al.*, have provided a housing for an PET isotope production system. The Wiberg *et al.*, device is intended for portability with the entire system, as described.

However, in the present invention, what is provided is a device for mounting on the housing of a cyclotron or particle accelerator, and within the shielding systems commonly in use such as those described by item 17 in the present application or items 1-4 in Wiberg *et al.* It is respectfully submitted that if the housing as mentioned in the present invention is equated to the housing of the Wiberg *et al.*, device, then what remains of the Wiberg *et al.*, device to compare to the present invention are the doors. What is provided in the present invention is a structure for closing and sealing an opening in the housing of a cyclotron or particle accelerator, as compared to Wiberg *et al.*, who disclose the entire system including the housing.

To this extent, Claim 1 has been amended to include the limitation that the present invention is a closure adapted to be mounted on the housing of a targeting assembly of a particle accelerator. When read in the context of the present invention, Wiberg *et al.*, fail to teach a closure including a door mounting assembly for mounting said first door on the housing of the particle accelerator.

Accordingly, it is respectfully submitted that, in view of the amendment to Claim 1 as discussed, the examiner’s rejection under 35 U.S.C. § 102(b) has been overcome. Having no further rejection of or objection to Claim 1, it is respectfully submitted that amended Claim 1 is in condition for allowance. Further, it is respectfully submitted that Claims 2-13 are each in condition for allowance as depending either directly or indirectly from an allowable base claim.

Rejections under 35 U.S.C. § 103(a)

In order to support a rejection under 35 U.S.C. § 103(a), “the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP § 2142, pg. 2100-121, 8th ed. “To reach a proper determination under 35 U.S.C. § 103(a), the examiner must step backward in time and into the shoes worn by the hypothetical ‘person of ordinary skill in the art’ when the invention was unknown and just before it was made.” *Id.* The first element in establishing a *prima facie* case

of obviousness is that “there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings.” MPEP § 2143, pg. 2100-122, 8th ed. The second element is that there “must be a reasonable expectation of success.” *Id.* The third element is that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” *Id.*

The relevant facts for finding obviousness relate to (1) the scope and content of the prior art, (2) the level of ordinary skill in the field of the invention, (3) the differences between the claimed invention and the prior art, and (4) any objective evidence of nonobviousness such as long felt need, commercial success, the failure of others, or copying. *Graham v. John Deere Co.*, 148 U.S.P.Q. 459, 467 (1966; see *Continental Can Co. v. Monsanto Co.*, 20 U.S.P.Q.2d 1746, 1750-51 (Fed. Cir. 1991). The Supreme Court in *Graham* stated that “the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.” *Graham*, 383 U.S. at 17, 148 U.S.P.Q. at 467. The *Graham* court further stated that “[s]uch secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.” *Id.*

The examiner rejected Claims 4, 5, 8-10, 14, 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over the ‘246 patent in view of U.S. Patent No. 4,801,423 (“the ‘423 patent”), issued to Warren *et al.* Specifically, the examiner has stated that:

“Wiberg *et al.* appears to show the door mounting hinge assemblies mounted directly on the housing. Warren *et al.*, on the other hand, teaches that radiation shielding doors (44, 46) can be more easily mounted in an opening in a housing by providing a frame (ring sections 16, 18) that supports the doors and mounting the hinge assemblies (22, 24) on the frame rather than directly on the housing. It would have been obvious to a person having ordinary skill in the art to provide such a frame to support the doors in the Wiberg *et al.* closure in order to take advantage of the greater ease of mounting taught by Warren *et*

al. Such a frame would inherently include a sill member (the bottom edge of the opening), a header member (the top edge of the opening), and first and second jamb members (the left and right edges of the opening) because these are the names used in the art to specify the respective edges of a door opening and no door opening can be defined without such edges. Wiberg et al. further teaches that each said first and second door should be substantially rectangular and define outboard and inboard edges, and upper and lower edges, and that each of the first and second jamb members defines a front surface, the outboard edge of the first door being pivotally secured to said first sill member with said first hinge assembly such that said first door covers said front surface of said first jamb member when said first door is in the closed position, and said outboard edge of said second door being pivotally secured to said second sill member with said second hinge assembly such that said second door covers said front surface of said second jamb member when said second door is in said closed position. While Wiberg et al. describes only the doors of the outer shielded enclosure of the particle accelerator, lines 11-16 in column 4 of the patent teaches that the targeting assembly compartment (9) should also be provided with doors supported by hinges for easy access to the processing systems inside the compartment. It would have been obvious to a person having ordinary skill in the art to make these targeting assembly doors in the same form as the outer doors described by Wiberg et al. rather than to change the design, and thereby complicate assembly of the overall device, and to use the frame mounting system disclosed by Warren et al. in order to take advantage of the greater ease of assembly taught by Warren et al.”

Applicants respectfully disagree with the examiner’s reading of Wiberg *et al.* Where the examiner states above that “Wiberg et al. appears to show the door mounting hinge assemblies mounted directly on the housing,” in fact, Wiberg *et al.* show the door mounting on the “fixed sections” to use Wiberg *et al.*’s terminology. These are stationary shield components, and not the accelerator housing to use the language of the present application. Moreover, the advantage of the present invention is not related to taking “advantage of the greater ease of mounting taught by Warren *et al.*” The advantage of the invention that is the subject of present application is that

the closure is mounted directly upon at highest proximity to the source of radiation in a way that is novel.

As discussed above, it is respectfully submitted that at least Claims 4, 5 and 8-10 are patentable over the cited prior art. It is respectfully submitted that such patentable subject matter is likewise claimed in independent Claim 14, and Claims 17 and 18 which depend there from, each of which now stands rejected. Notwithstanding, Wiberg *et al.*, and Warren *et al.*, fail to anticipate or make obvious the invention as claimed in Claims 4, 5, 8-10, 14, 17 and 18.

Warren *et al.*, teach a door assembly including a split ring flange-type mounting bracket which is installed on a manway flange. Warren *et al.*, fail to teach a frame having the structure as defined and claimed in the present invention. Specifically with respect to Claims 8 and 17 and their respective dependents, Warren *et al.*, fail to teach a frame including a sill member, a header member, and first and second jamb members.

Accordingly, it is respectfully submitted that with the amendments to Claims 1 and 4 as discussed, the examiner's rejection of Claims 4, 5, 8-10, 14, 17 and 18 under 35 U.S.C. § 103(a) have been overcome.

The examiner rejected Claims 2, 6, 7, 15, 16 and 23-25 under 35 U.S.C. § 103(a) as being unpatentable over the '246 and '423 patents, as applied to Claims 4, 5, 8-10, 14, 17 and 18 above, and further in view of U.S. Patent Application, Publication No. 2002/0060300 ("the '300 application"), filed by O'kane, Sr. *et al.* Specifically, the examiner has stated that:

"[w]hile Wiberg et al. teaches to make the shielding of the targeting assembly (including the doors thereof) of lead, O'kane, SR. et al. teaches in paragraph [0042] that copper is equivalent to lead as a high Z material suitable for shielding purposes. The replacement of the lead doors of the Wiberg et al. targeting assembly, with or without the frame taught by Warren et al., with copper doors would therefore have been an obvious substitution of known equivalents."

As discussed above, it is respectfully submitted that Claims 4, 5 and 8-10, 14, 17 and 18 are patentable over the cited prior art. It is respectfully submitted that such patentable subject matter is likewise claimed in independent Claim 23, and Claims 24 and 25 which depend there from, each of which now stands rejected. Notwithstanding, Wiberg *et al.*, Warren *et al.*, and O'kane, Sr. *et al.*, fail to anticipate or make obvious the invention as claimed in Claims 2, 6, 7, 15, 16 and 23-25.

Accordingly, it is respectfully submitted that the examiner's rejection of Claims 2, 6, 7, 15, 16 and 23-25 under 35 U.S.C. § 103(a) have been overcome.

The examiner rejected Claims 11, 12 and 19-22 under 35 U.S.C. § 103(a) as being unpatentable over the '246 and '423 patents, as applied to claims 4, 5, 8-10, 14, 17 and 18 above, and further in view of U.S. Patent No. 4,074,141 ("the '141 patent") issued to Bryant. Specifically, the examiner has stated that:

"[a]s is illustrated in Figure 8, Bryant teaches to provide rabbets (shown in the drawing by the dashed line for the opening 200) along the edges of a doorway in radiation shielding. This arrangement prevents radiation from leaking around the edges of the door. It would have been obvious to a person having ordinary skill in the art to apply this teaching to the Wiberg *et al.*/Warren *et al.* door discussed above by defining rabbets in all four edges around the door opening, i.e. the sill member, the header member, and both jamb members so as to prevent radiation leakage. Warren *et al.* also teaches, as is illustrated in Figure 3 and discussed at lines 48-52 in column 5, to form a rabbet in the inboard edge of at least one of two doors in a radiation shielding door so that the inboard edges of the two doors overlap when they are closed so as to prevent radiation "streaming" through a gap between the two doors. It would also have been obvious to a person having ordinary skill in the art to apply this teaching to the Wiberg *et al.*/Warren *et al.* door discussed above by defining rabbets in at least one of the doors to prevent this streaming. It would have been obvious to a person having ordinary skill in the art to provide complementary rabbets in both doors to achieve the required overlap. This would allow the two doors to close flat against the doorframe. Warren *et al.* further teaches to provide first and second securing pins (32) and corresponding holes in the doors and header

members (arms 26) to lock the two doors in a desired position. While Warren *et al.* uses this locking mechanism to secure the doors in an open position, it would have been obvious to a person having ordinary skill in the art to use a similar mechanism to secure the doors in a closed position if having the doors come open accidentally was considered to be a bigger problem than having them close accidentally.”

As discussed above, it is respectfully submitted that Claims 4, 5 and 8-10, 14, 17 and 18 are patentable over the cited prior art. Notwithstanding, Wiberg *et al.*, Warren *et al.*, O’kane, Sr. *et al.*, and Bryant fail to anticipate or make obvious the invention as claimed in Claims 11, 12 and 19-22.

Accordingly, it is respectfully submitted that the examiner’s rejection of Claims 11, 12 and 19-22 under 35 U.S.C. § 103(a) have been overcome.

Finally, the examiner rejected Claims 13, 26 and 27 under 35 U.S.C. § 103(a) as being unpatentable over the ‘246, ‘423 and ‘141 patents, as applied to claims 11, 12, and 19-22 above, and further in view of the ‘300 application.

As discussed above, it is respectfully submitted that Claims 11, 12 and 19-22 are patentable over the cited prior art. It is respectfully submitted that such patentable subject matter is likewise claimed in independent Claim 23, and Claims 26 and 27 which depend there from, each of which now stands rejected. Notwithstanding, Wiberg *et al.*, Warren *et al.*, Bryant and O’kane, Sr. *et al.*, fail to anticipate or make obvious the invention as claimed in Claims 13, 26 and 27.

Accordingly, it is respectfully submitted that the examiner’s rejection of Claims 13, 26 and 27 under 35 U.S.C. § 103(a) have been overcome.

New Claims

New Claims 28-40 have been added. These claims include the limitations of Claims 1-13 with the additional limitation that the door defines an interior surface having a contour to be closely received over at least one component of the target assembly of the particle accelerator. This is as disclosed in the Specification of the present invention at page 9, lines 6-11 and illustrated in FIGS. 5 and 8. It is

respectfully submitted that the cited prior art is devoid of such teaching in the present environment. Accordingly, it is respectfully submitted that new Claims 28-40 are in condition for allowance as presented.

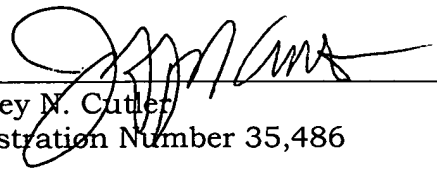
Summary

In view of the amendment of Claims 1 and 4, and the arguments presented herein, it is believed that the above-identified patent application is in a condition for the issuance of a Notice of Allowance. Such action by the examiner is respectfully requested. If, however, the examiner is of the opinion that any of the drawings or other portions of the application are still not allowable, it will be appreciated if the examiner will telephone the undersigned to expedite the prosecution of the application.

Please charge any additional fees associated with this communication, or credit any overpayment, to Deposit Account No. 16-1910.

Respectfully submitted,

PITTS AND BRITTIAN, P.C.

By 
Jeffrey N. Cutler
Registration Number 35,486

PITTS AND BRITTIAN, P.C.
P.O. Box 51295
Knoxville, Tennessee 37950-1295
(865) 584-0105 Voice
(865) 584-0104 Fax